



SEQUENCE LISTING

<110> Sjoeholm, Carsten
Oestergaard, Peter Rahbek
Kluenter, Anne-Marie

<120> Use of Acid-Stable Subtilisin Proteases in Animal Feed

<130> NOVT 100

<140> 09/779,334

<141> 2001-02-08

<160> 7

<170> PatentIn version 3.1

<210> 1

<211> 27

<212> PRT

<213> Acremonium chrysogenum ATCC 48272

<400> 1

Ala Leu Val Thr Gln Asn Gly Ala Pro Trp Gly Leu Gly Thr Ile Ser
1 5 10 15

His Arg Gln Pro Gly Ser Thr Ser Tyr Ile Tyr
20 25

<210> 2

<211> 17

<212> PRT

<213> Bacillus alcalophilus NCIMB 10438

<400> 2

Asn Gln Val Thr Pro Trp Gly Ile Thr Arg Val Gln Ala Pro Thr Ala
1 5 10 15

Trp

<210> 3

<211> 17
 <212> PRT
 <213> Paecilomyces lilacinus CBS 102449

 <400> 3

Ala Tyr Thr Gln Gln Pro Gly Ala Pro Trp Gly Leu Gly Arg Ile Ser
 1 5 10 15

His

<210> 4
 <211> 22
 <212> PRT
 <213> Fusarium oxysporum IFO 4471

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Ala Leu Thr Thr Gln Ser Gly Ala Thr Trp Gly Leu Gly Thr Val Ser
 1 5 10 15

His Arg Ser Arg Gly Ser
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<210> 5
 <211> 397
 <212> PRT
 <213> Bacillus sp. NCIMB 40484

<220>
 <221> SIGNAL
 <222> (1)..(27)
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<220>
 <221> PEPTIDE
 <222> (118)..(397)
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<220>
 <221> mat_peptide

<222> (28) .. ()
<223>

<400> 5

Met Lys Phe Lys Lys Ile Ala Ala Leu Ser Leu Ala Thr Ser Leu Ala
-25 -20 -15

Leu Phe Pro Ala Phe Gly Gly Ser Ser Leu Ala Lys Glu Ala Pro Lys
-10 -5 -1 1 5

Pro Phe Gln Pro Ile Asn Lys Thr Leu Asp Lys Gly Ala Phe Glu Ser
10 15 20

Gly Glu Val Ile Val Lys Phe Lys Asp Gly Val Ser Lys Lys Ala Gln
25 30 35

Gly Ser Ala Leu Asn Lys Ala Glu Ala Asn Glu Gln Lys Ala Ser Ala
40 45 50

Lys Asp Pro Phe Gln Val Leu Glu Val Ala Asp Val Asp Gln Ala Val
55 60 65

Lys Ala Leu Glu Asn Asn Pro Asn Val Glu Tyr Ala Glu Pro Asn Tyr
70 75 80 85

Thr Phe Gln Ala Thr Trp Ser Pro Asn Asp Pro Tyr Tyr Ser Ala Tyr
90 95 100

Gln Tyr Gly Pro Gln Asn Thr Ser Thr Pro Ala Ala Trp Asp Val Thr
105 110 115

Arg Gly Ser Ser Thr Gln Thr Val Ala Val Leu Asp Ser Gly Val Asp
120 125 130

Tyr Asn His Pro Asp Leu Ala Arg Lys Val Ile Lys Gly Tyr Asp Phe
135 140 145

Ile Asp Arg Asp Asn Asn Pro Met Asp Leu Asn Gly His Gly Thr His
150 155 160 165

Val Ala Gly Thr Val Ala Ala Asp Thr Asn Asn Gly Ile Gly Val Ala
170 175 180

Gly Met Ala Pro Asp Thr Lys Ile Leu Ala Val Arg Val Leu Asp Ala
185 190 195

Asn Gly Ser Gly Ser Leu Asp Ser Ile Ala Ser Gly Ile Arg Tyr Ala
200 205 210

Ala Asp Gln Gly Ala Lys Val Leu Asn Leu Ser Leu Gly Cys Glu Cys
215 220 225

Asn Ser Thr Thr Leu Lys Ser Ala Val Asp Tyr Ala Trp Asn Lys Gly
230 235 240 245

Ala Val Val Val Ala Ala Ala Gly Asn Asp Asn Val Ser Arg Thr Phe
250 255 260

Gln Pro Ala Ser Tyr Pro Asn Ala Ile Ala Val Gly Ala Ile Asp Ser
265 270 275

Asn Asp Arg Lys Ala Ser Phe Ser Asn Tyr Gly Thr Trp Val Asp Val
280 285 290

Thr Ala Pro Gly Val Asn Ile Ala Ser Thr Val Pro Asn Asn Gly Tyr
295 300 305

Ser Tyr Met Ser Gly Thr Ser Met Ala Ser Pro His Val Ala Gly Leu
310 315 320 325

Ala Ala Leu Leu Ala Ser Gln Gly Lys Asn Asn Val Gln Ile Arg Gln
330 335 340

Ala Ile Glu Gln Thr Ala Asp Lys Ile Ser Gly Thr Gly Thr Asn Phe
 345 350 355

Lys Tyr Gly Lys Ile Asn Ser Asn Lys Ala Val Arg Tyr
 360 365 370

<210> 6
 <211> 367
 <212> PRT
 <213> Paecilomyces lilacinus CBS 143.75

<220>
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 <222> (70)..(367)
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<220>
 <221> PEPTIDE
 <222> (84)..(367)
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<400> 6

Ala Arg Ala Pro Leu Leu Thr Pro Arg Gly Ala Ser Ser Ser Ser Thr
 1 5 10 15

Ala Ser Thr Leu Ser Ser Ser Arg Thr Ala Cys Pro Ser Pro Leu Ser
 20 25 30

Thr Arg Leu Ser Ala Leu Cys Pro Arg Arg Pro Thr Ala Ser Thr Thr
 35 40 45

Thr Phe Ser Glu Ala Ser Arg Asn Leu Asn Ala Asn Asp Leu Lys Thr
 50 55 60

Leu Arg Asp His Pro Asp Val Glu Tyr Ile Glu Gln Asp Ala Ile Ile
 65 70 75 80

Thr	Ile	Asn	Ala	Tyr	Thr	Gln	Gln	Pro	Gly	Ala	Pro	Trp	Gly	Leu	Gly	85	90	95	
Arg	Ile	Ser	His	Arg	Ser	Lys	Gly	Ser	Thr	Thr	Tyr	Glu	Tyr	Asp	Thr	100	105	110	
Ser	Gly	Gly	Ser	Gly	Thr	Cys	Ala	Tyr	Val	Ile	Asp	Thr	Gly	Val	Glu	115	120	125	
Ala	Ser	His	Pro	Glu	Phe	Glu	Gly	Arg	Ala	Ser	Gln	Ile	Lys	Ser	Phe	130	135	140	
Ile	Ser	Gly	Gln	Asn	Thr	Asp	Gly	Asn	Gly	His	Gly	Thr	His	Cys	Ala	145	150	155	160
Gly	Thr	Ile	Gly	Ser	Lys	Thr	Tyr	Gly	Val	Ala	Lys	Lys	Thr	Lys	Ile	165	170	175	
Tyr	Gly	Val	Lys	Val	Leu	Asp	Asn	Ser	Gly	Ser	Gly	Ser	Tyr	Ser	Gly	180	185	190	
Ile	Ile	Ser	Gly	Met	Asp	Phe	Ala	Val	Gln	Asp	Ser	Lys	Ser	Arg	Ser	195	200	205	
Cys	Pro	Lys	Gly	Val	Val	Ala	Asn	Met	Ser	Leu	Gly	Gly	Gly	Lys	Ala	210	215	220	
Gln	Ser	Val	Asn	Asp	Gly	Ala	Ala	Ala	Met	Ile	Arg	Ala	Gly	Val	Phe	225	230	235	240
Leu	Ala	Val	Ala	Ala	Gly	Asn	Asp	Asn	Ala	Asn	Ala	Ala	Asn	Tyr	Ser	245	250	255	
Pro	Ala	Ser	Glu	Pro	Thr	Val	Cys	Thr	Val	Gly	Ala	Thr	Thr	Ser	Ser	260	265	270	

Asp Ala Arg Ser Ser Phe Ser Asn Tyr Gly Asn Leu Val Asp Ile Phe
 275 280 285

Ala Pro Gly Ser Asn Ile Leu Ser Thr Trp Ile Gly Gly Thr Thr Asn
 290 295 300

Thr Ile Ser Gly Thr Ser Met Ala Thr Pro His Ile Val Gly Leu Gly
 305 310 315 320

Ala Tyr Leu Ala Gly Leu Glu Gly Phe Pro Gly Ala Gln Ala Leu Cys
 325 330 335

Lys Arg Ile Gln Thr Leu Ser Thr Lys Asn Val Leu Thr Gly Ile Pro
 340 345 350

Ser Gly Thr Val Asn Tyr Leu Ala Phe Asn Gly Asn Pro Ser Gly
 355 360 365

<210> 7

<211> 269

<212> PRT

<213> Bacillus sp. THS-1001

<400> 7

Asn Gln Val Thr Pro Trp Gly Ile Thr Arg Val Gln Ala Pro Thr Ala
 1 5 10 15

Trp Thr Arg Gly Tyr Thr Gly Thr Gly Val Arg Val Ala Val Leu Asp
 20 25 30

Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Val Ser
 35 40 45

Phe Val Pro Gly Glu Pro Ser Tyr Gln Asp Gly Asn Gly His Gly Thr
 50 55 60

His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Val
65 70 75 80

Gly Val Ala Pro Asn Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala
85 90 95

Asn Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Gln Trp Thr
100 105 110

Ala Gln Asn Asn Ile His Val Ala Asn Leu Ser Leu Gly Ser Pro Val
115 120 125

Gly Ser Gln Thr Leu Glu Leu Ala Val Asn Gln Ala Thr Asn Ala Gly
130 135 140

Val Leu Val Val Ala Ala Thr Gly Asn Asn Gly Ser Gly Thr Val Ser
145 150 155 160

Tyr Pro Ala Arg Tyr Ala Asn Ala Leu Ala Val Gly Ala Thr Asp Gln
165 170 175

Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Thr Gly Leu Asn Ile
180 185 190

Val Ala Pro Gly Val Gly Ile Gln Ser Thr Tyr Pro Gly Asn Arg Tyr
195 200 205

Ala Ser Leu Ser Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Val
210 215 220

Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Thr Gln Ile
225 230 235 240

Arg Gln His Leu Thr Ser Thr Ala Thr Ser Leu Gly Asn Ser Asn Gln
245 250 255

Phe Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg
260 265